STUDENTS GUIDE

for

EA-6B I-CAP COMMUNICATIONS, NAVIGATION AND APS-130 RADAR ORGANIZATIONAL MAINTENANCE COURSE

SECTION I (INFORMATION SHEETS) SECTION IV (DIAGRAMS)

C-102-3986



CNTT N4420D

NAVAL AIR MAINTENANCE TRAINING GROUP

For Training Purposes Only

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EA-6B (ICAP) INTEGRATED NAVIGATION SYSTEM MAINTENANCE ANALYST

INFORMATION SHEET 4.4.1-IS-1

DATE: September 1982

TITLE: DIRECT VIEW STORAGE TUBE (DVST) OPERATION

- 1. Components
 - a. DVST has five components
 - (1) Writing gun
 - (2) Deflection system
 - (3) Flooding gun
 - (4) Collimating system
 - (5) Storage display system
 - b. Writing gun is comparable to the electron gun in a conventional CRT
 - Target is a storage display system instead of a viewing screen
 - (2) Storage display system is charged by the video information contained in the write gun beam
 - c. Deflection system is a conventional magnetic deflection system
 - d. Flooding gun provides a continuous low energy beam
 - (1) Collimating system ensures beam approaches the storage display system perpendicularly and with uniform density
 - (2) Flood beam allowed to pass the storage display system on to the viewing screen and is proportional to the change on each storage element. The display pattern becomes a visual reproduction of the stored electric charge pattern

(2) Electrode makes all elect: the storage surface at 90

Storage display system consist

- (1) Storage surface: special information written by th
- (2) Collector electrode:
 - (1) Fine metallic mesh 1 in flooding beam
 - (2) Provides a return pa secondary electrons
- (3) Backing electrode: mesh which the storage surface
- (4) Aluminized viewing scree to give a bluish-green d

- d. Charge pattern on the storage surface controls the flood beam electrons that pass into the viewing screen field.
 - The display pattern is a visual reproduction of the stored electric charge pattern.
 - (2) Control of the persistence is effected by the duration and frequency of the erase pulses to the backing electrode
- 3. Development of Operating Voltage
 - a. Viewing screen voltage
 - (1) Generated by the High Voltage Power Supply (HVPS)
 - (2) +10K VDC output is connected to the DVST viewing screen
 - b. Write gun is referenced to -2K VDC
 - (1) Voltage is developed in the HVPS and routed to the High Voltage Coupler Assembly
 - c. Write gun control grid
 - (1) A 5 KHz sine wave is generated by an oscillator in Sweep Loss Protect A2
 - (a) Amplitude of the sine wave is controlled by the PHD BRT Control on the DISPLAYS Control Panel
 - (b) Amplified sine wave is routed to a 5 KHz bias transformer rectifier in the High Voltage Coupler Assembly
 - (2) 5 KHz bias transformer rectifier
 - (a) Transformer is a step-up device clamped to -2K VDC
 - (b) Rectifier is a voltage from -2K VDC to -1.8K of the 5 KHz input
 - (3) Video from the Video Ampliadded to output from the 1 grid Gl

- d. Write gun cathode
 - (1) -2K VDC is reduced to approximately -1.8K VDC in the High Voltage Coupler Assembly and provided to the cathode/filament line as a baseline DVST cut-off
 - (2) Composite intensity gate from the Intensity Gate Amplifier A3 is:
 - (a) Routed to the High Voltage Coupler Assembly
 - (b) Clamped to the baseline level
 - (3) Clamped intensity gate is routed to the DVST cathode
 - (a) Negative pulses applied to the cathode decrease the negative grid-to-cathode voltage
 - (b) Decreased negative grid-to-cathode voltage permits electron flow and unblanks the DVST

NOTE: A DVST cut-off condition exists if either the PHD BRT control is at minimum or there is no intensity gate

- e. Wtite gun filaments
 - (1) 115V, 400 Hz, phase A is provided to a filament transformer in the High Voltage Coupler
 - (2) 6.3 VAC secondary voltage is
 - (a) Clamped to the cathode potential to prevent arcing
 - (b) Routed to the DVST filaments
- f. Write gun focus grid
 - (1) -2K VDC within the High Voltage Coupler Assembly is routed to a zener diode/resistor voltage divider
 - (2) DC level values between approximately -1.4 and 1.7K VDC are:
 - (a) Available with a focus potentiometer in the divider network
 - (b) Routed to the DVST focus grid

- g. Flood gun filaments are provided with 6.3 VDC from the 6.3 VDC Power Supply Al2
- h. Flood gun cathode is wired to ground potential in Sweep Loss Protect Assembly A2
- i. Flood gun control grid is provided with an adjustable -30 VDC to 0 VDC from the Sweep Loss Protector Assembly A2
- j. Flood gun collimating grid is provided with filtered 120 VDC from the Sweep Loss Protector A2

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SECTION IV (DIAGRAMS)

DATE: September 1982

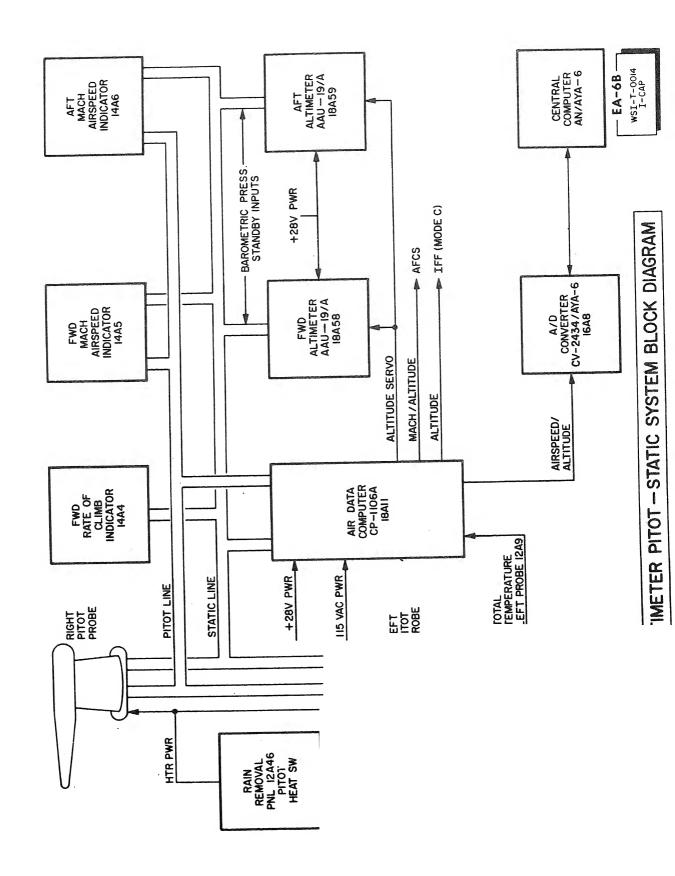
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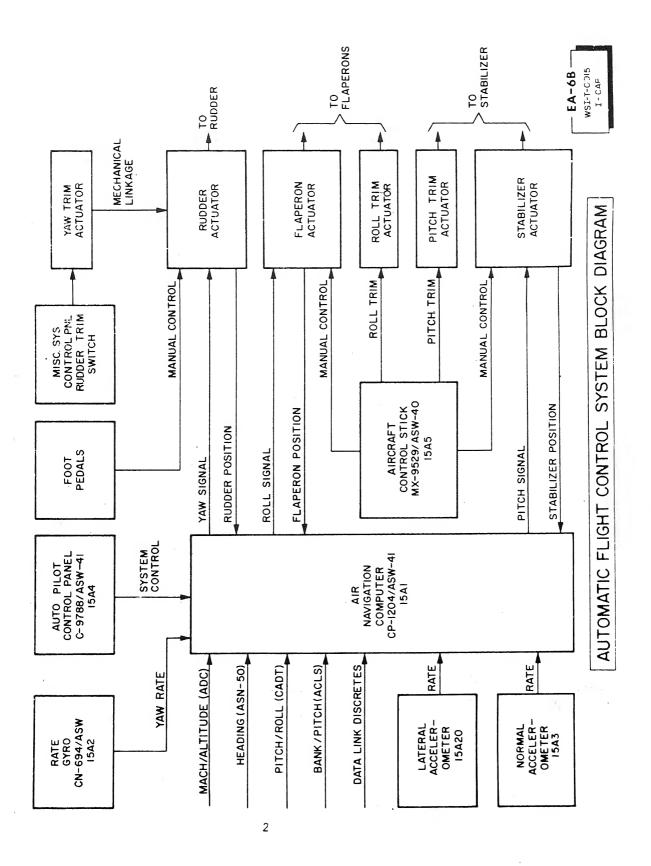
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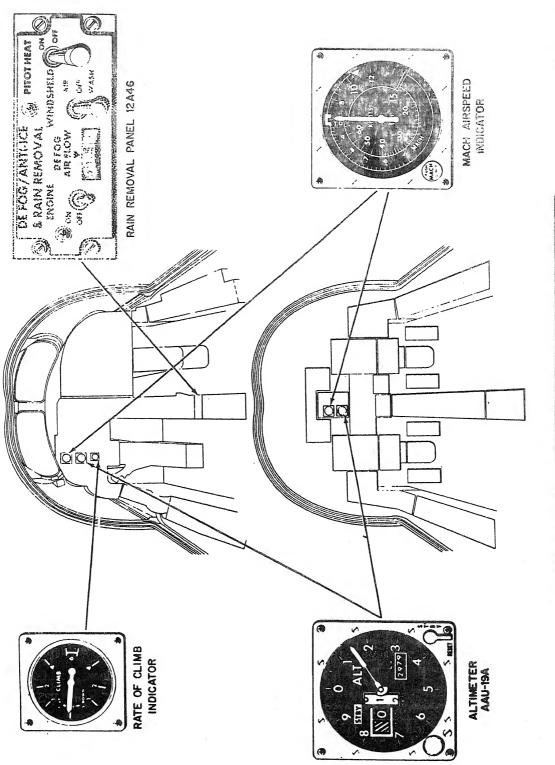
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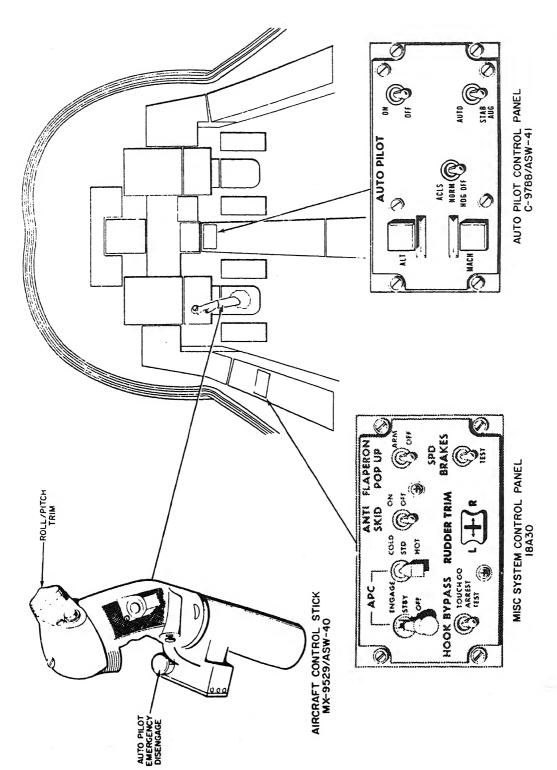






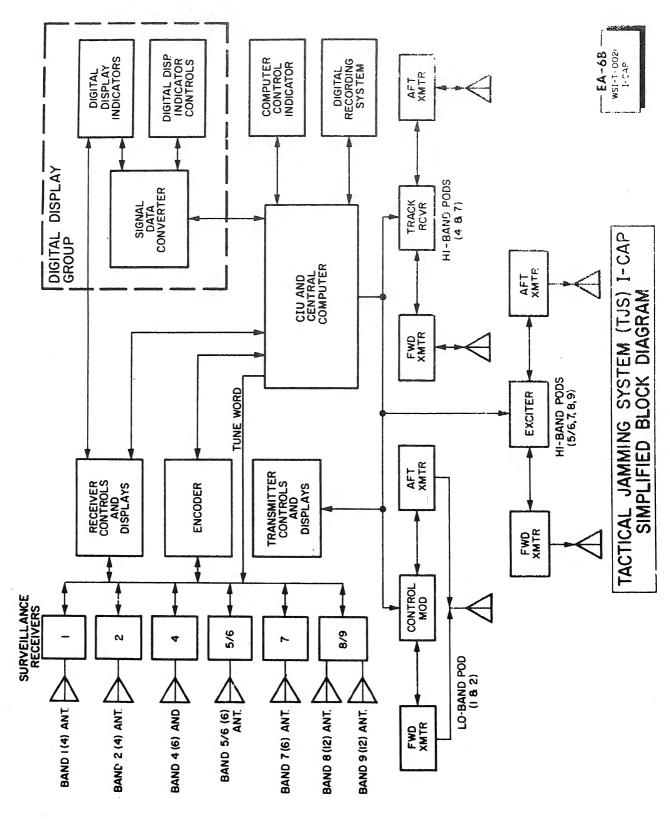
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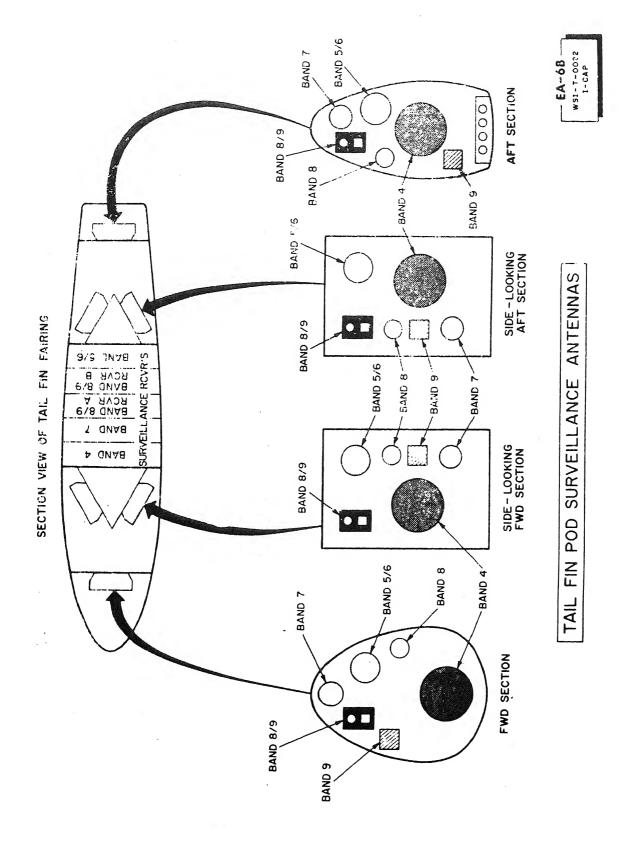
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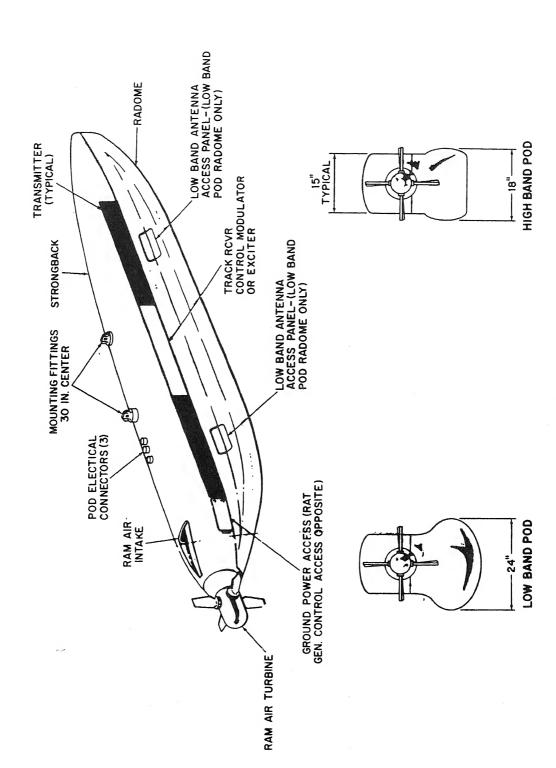


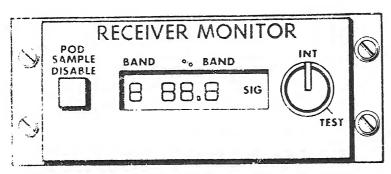
EA-6B WSI-T-0020 I-CAP

AUTOMATIC FLIGHT CONTROL SYSTEM DISPLAY AND CONTROLS

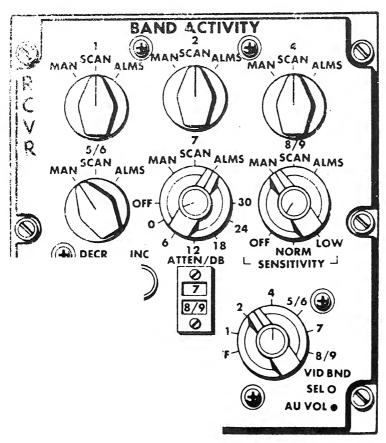






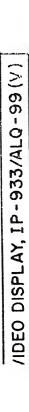


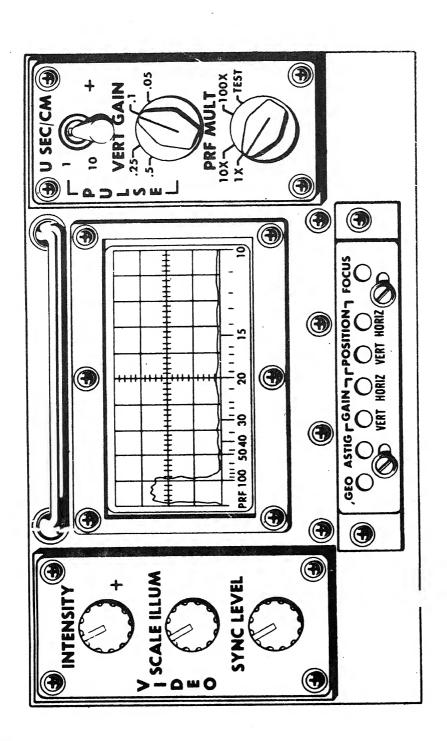
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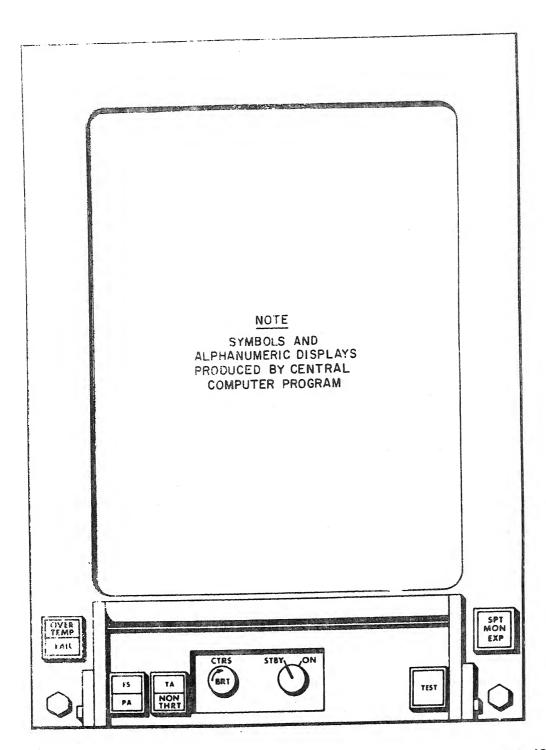


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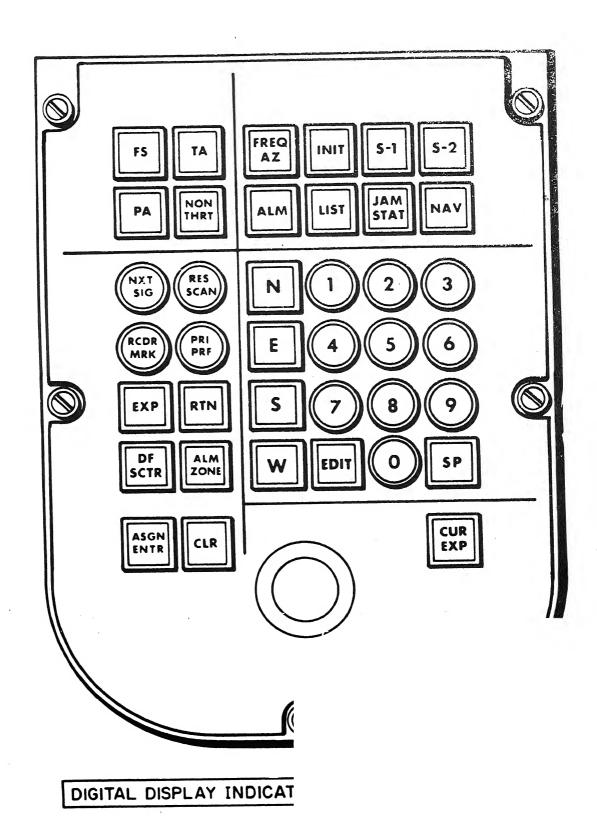
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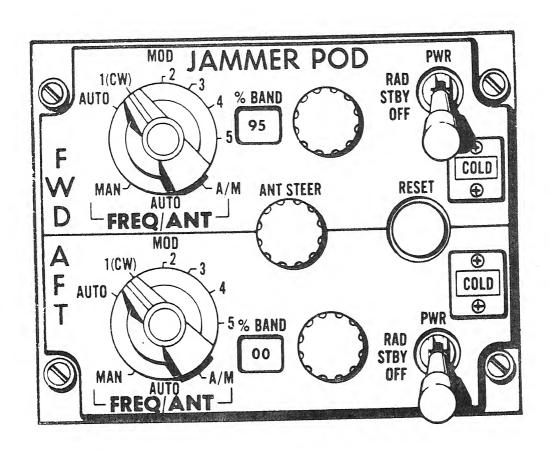






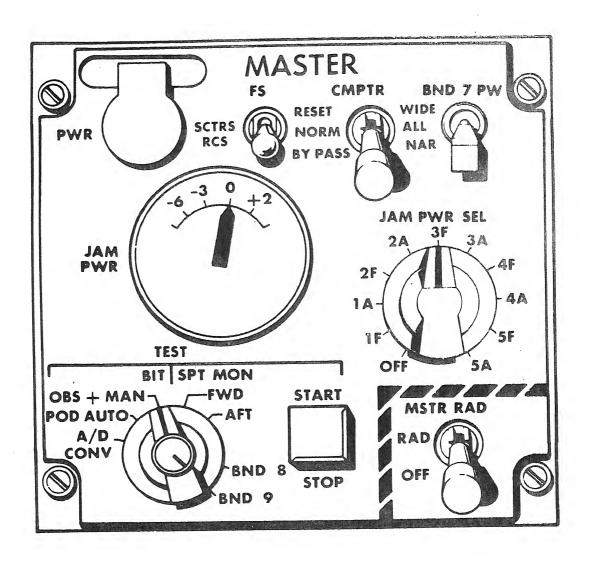
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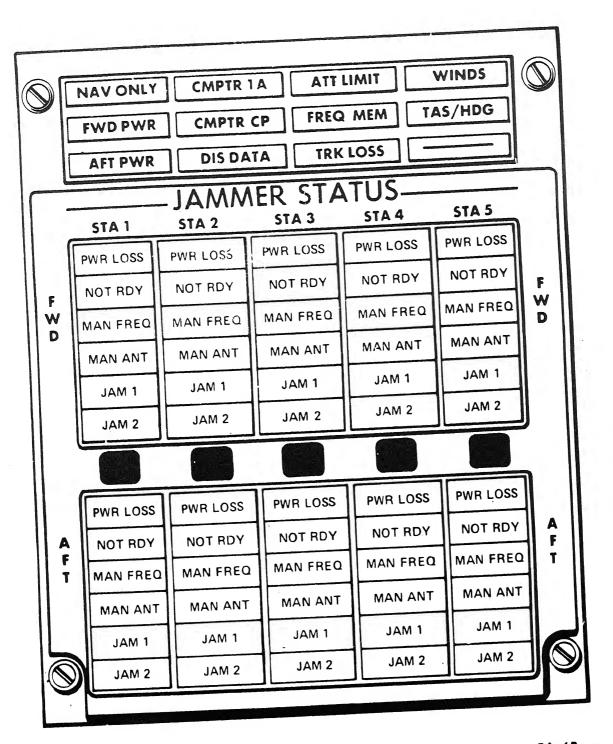


JAMMER POD CONTROL C-8318B/ALQ-99(V)

— EA-6B — WSI-T-0028 I-CAP



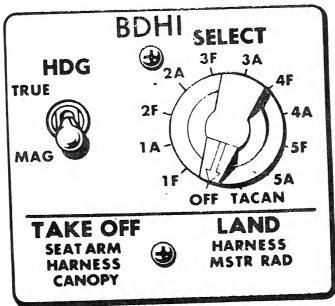
MASTER CONTROL PANEL C-9978/ALQ-99D



JAMMER STATUS PANEL

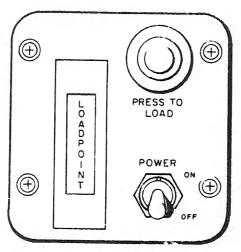
— EA-6B — WSI-T-0030 I-CAP





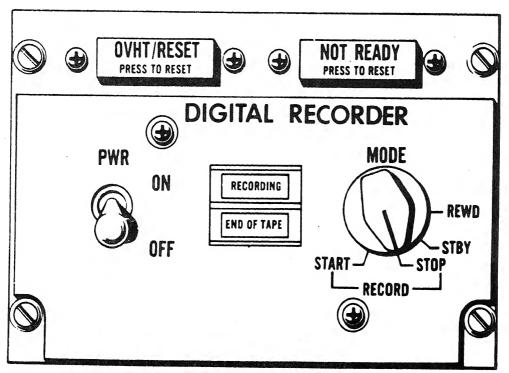
BDHI AND BDHI CONTROL PANEL

- EA-6B --WSI-T-003I I-CAP



CONTROL INDICATOR TAPE RELOADING C-9495/ASH-30

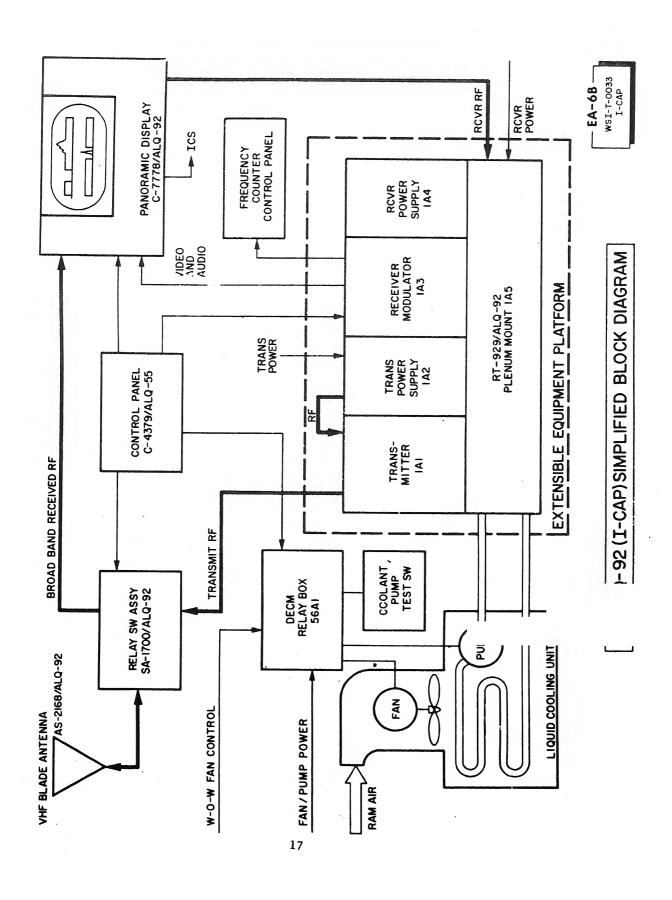
LOCATED BY RECORDER IN RIGHT FORWARD EQUIPMENT BAY

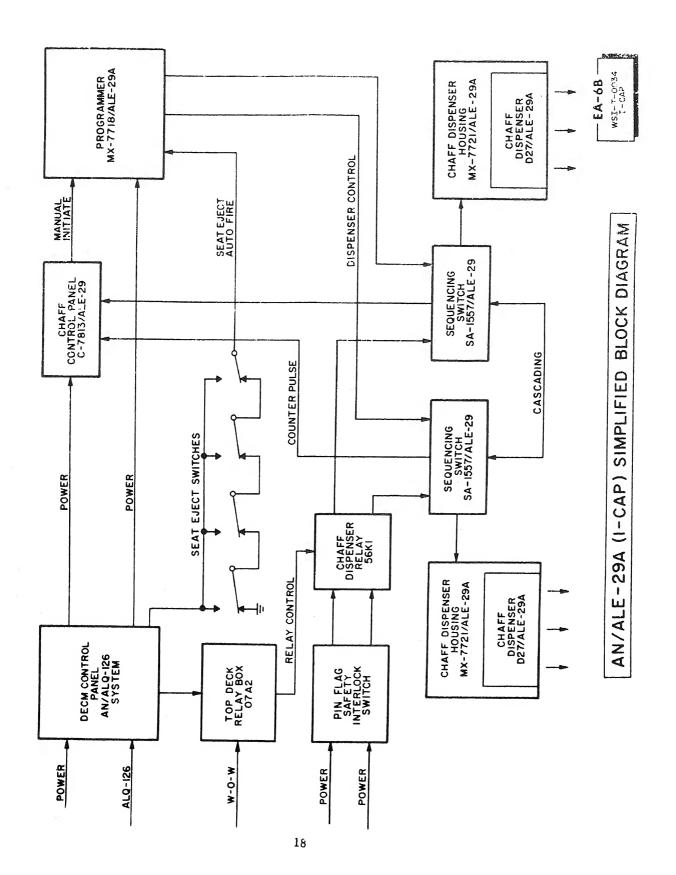


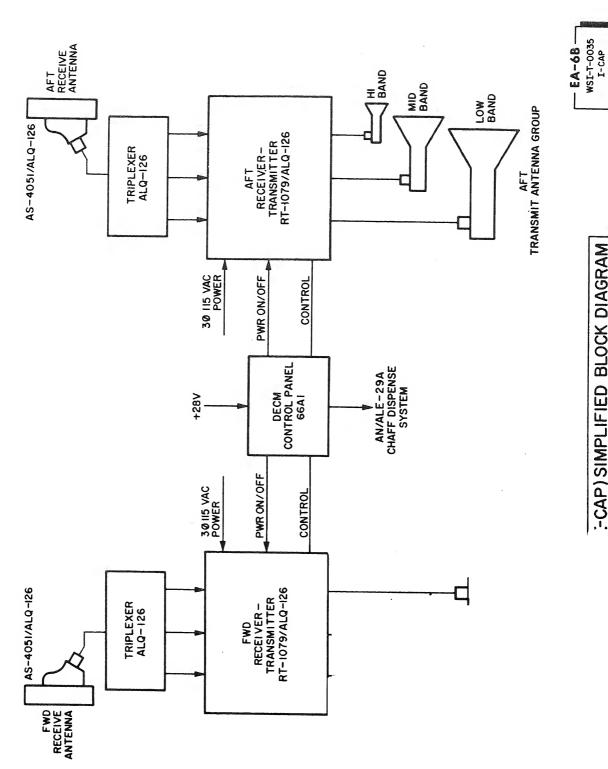
DIGITAL RECORDER CONTROL C-9494/ASH-30

DIGITAL RECORDER CONTROLS

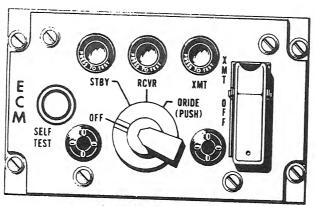
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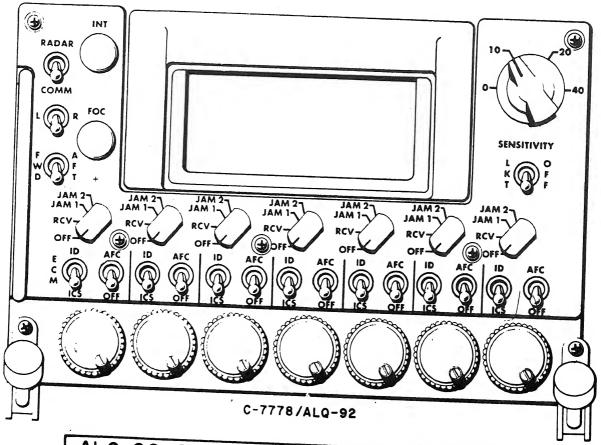




:-CAP) SIMPLIFIED BLOCK DIAGRAM

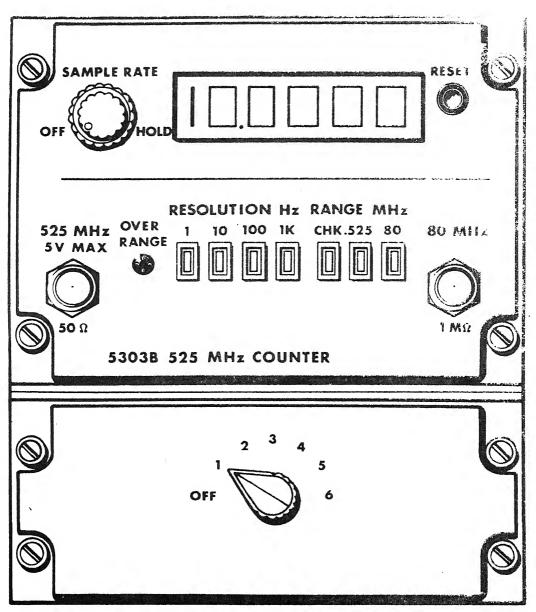


C-4379/ALQ-55



ALQ-92 DISPLAY AND CONTROL PANELS

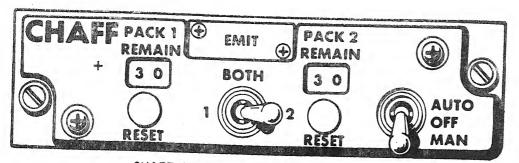
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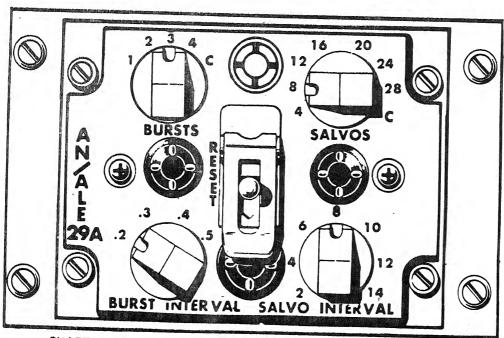
FREQUENCY COUNTER CONTROL UNIT

AN/ALQ-92 FREQUENCY COUNTER PANEL

--- EA-6B ---WSI-T-0037

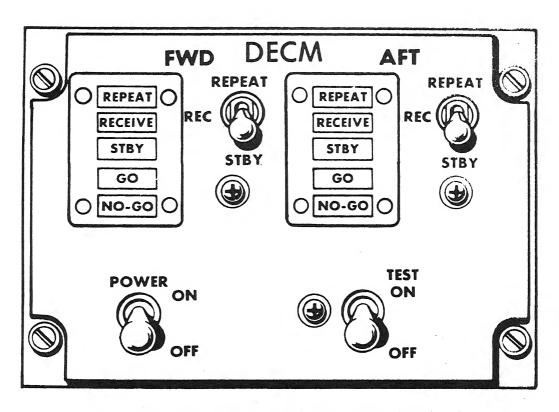


CHAFF CONTROL PANEL C-7813/ALE-29



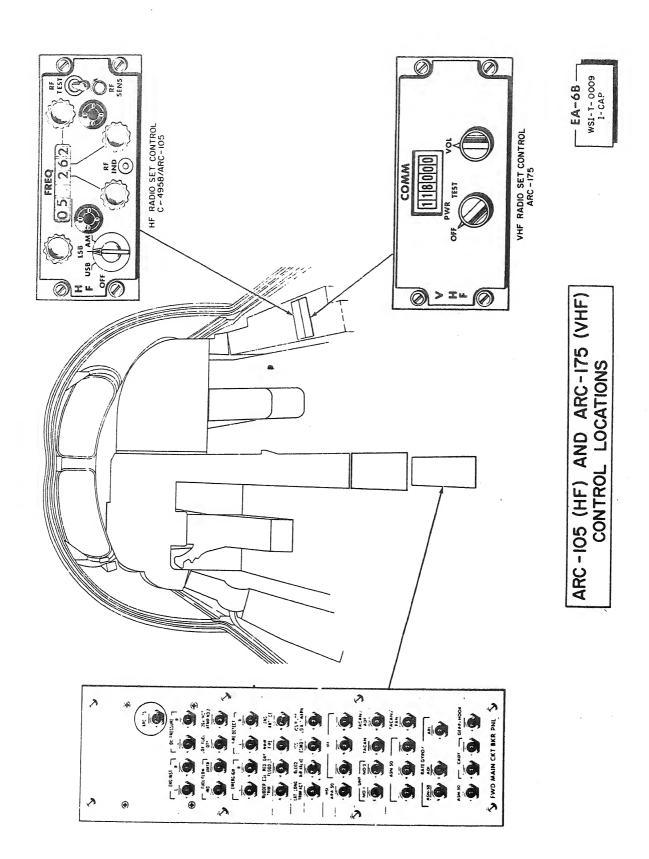
CHAFF DISPENSER PROGRAMMER PANEL, MX-7718/ALE-29A

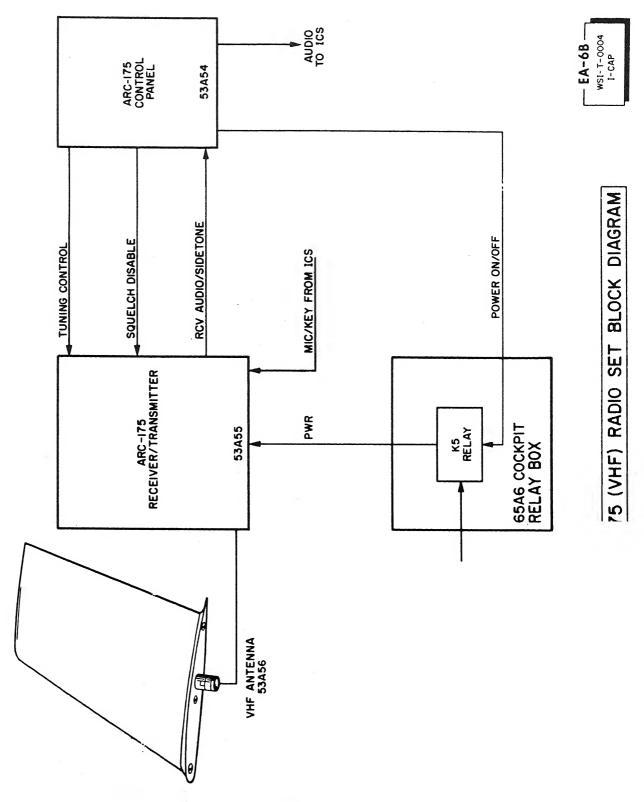
ALE-29A CONTROL PANELS

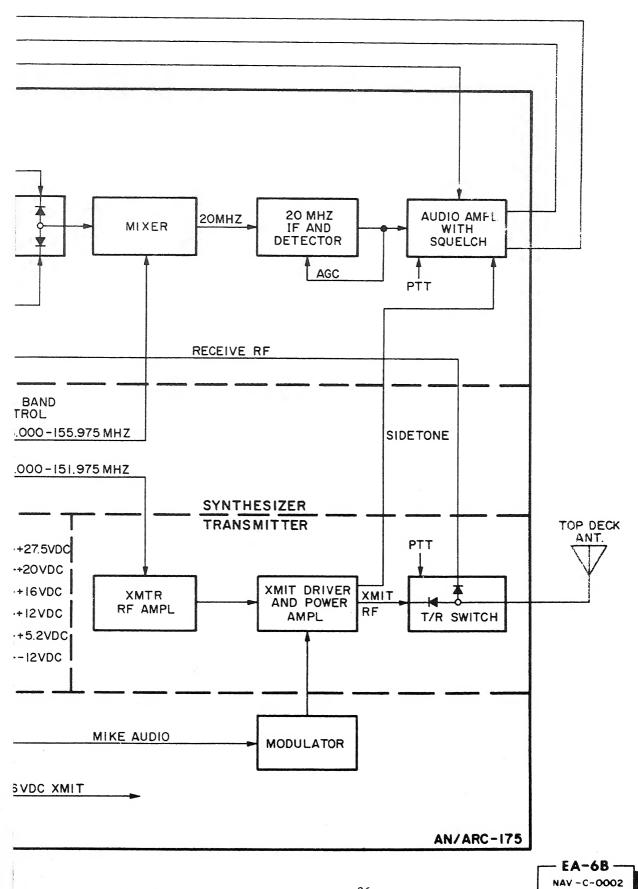


ALQ-126 SYSTEM CONTROL PANEL (CFE)

DECM CONTROL PANEL

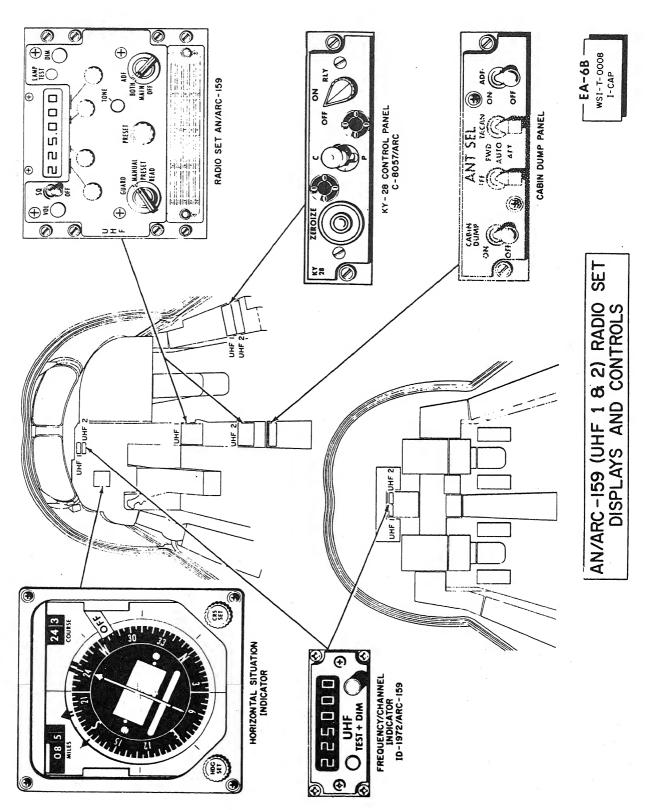


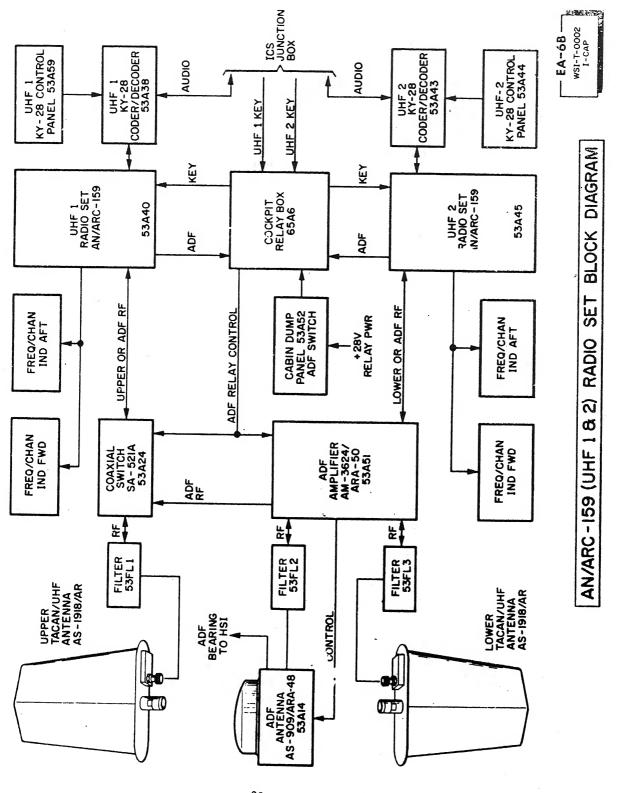


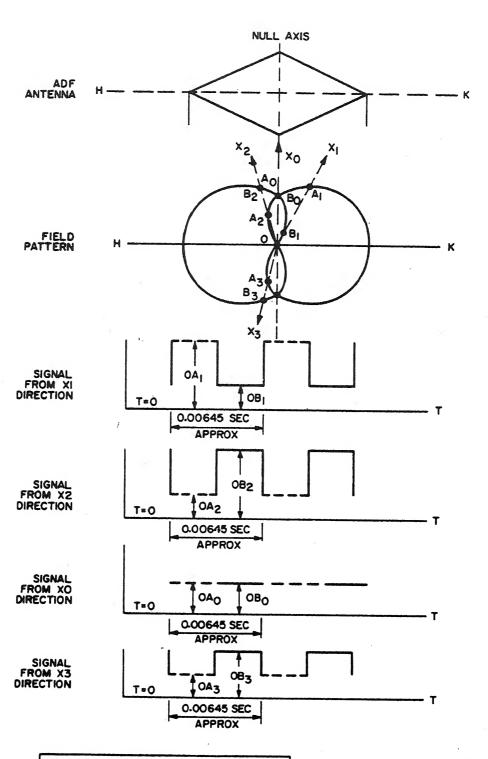


I-CAP

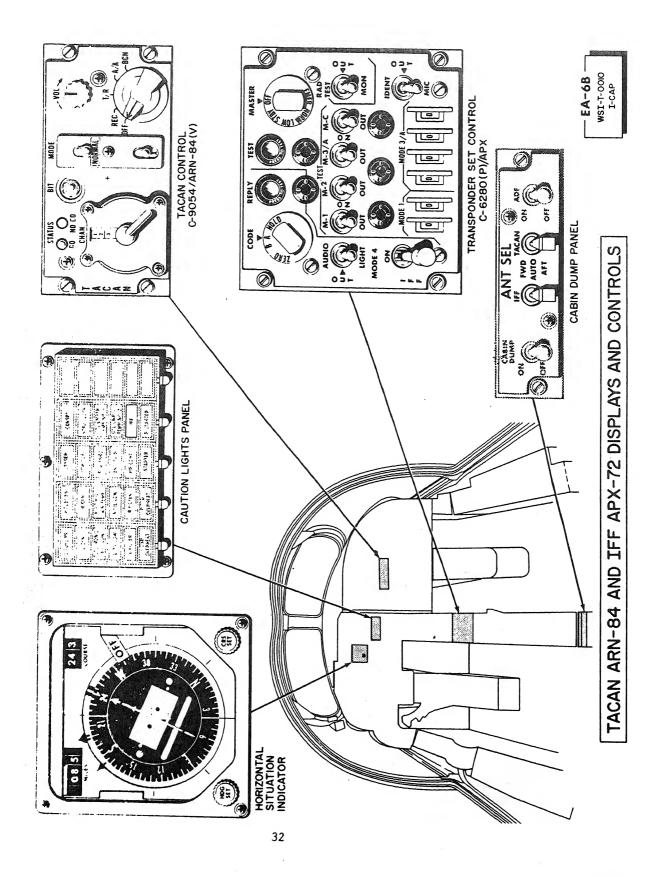


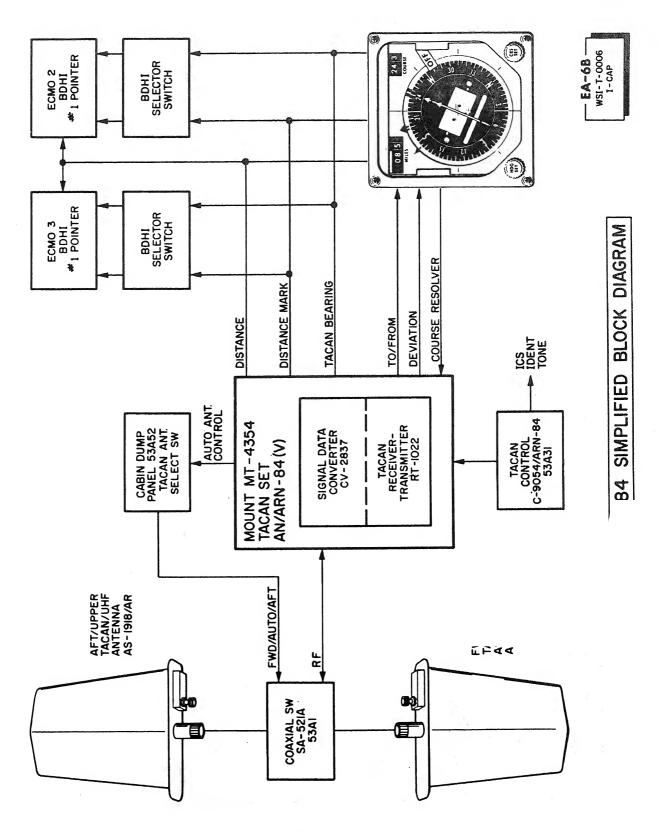


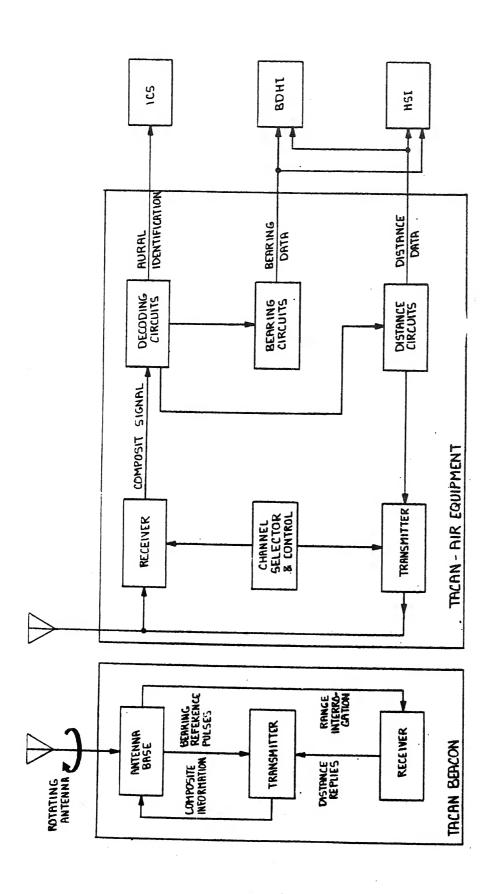




ADF ANTENNA PATTERN AND 155 Hz SIGNAL

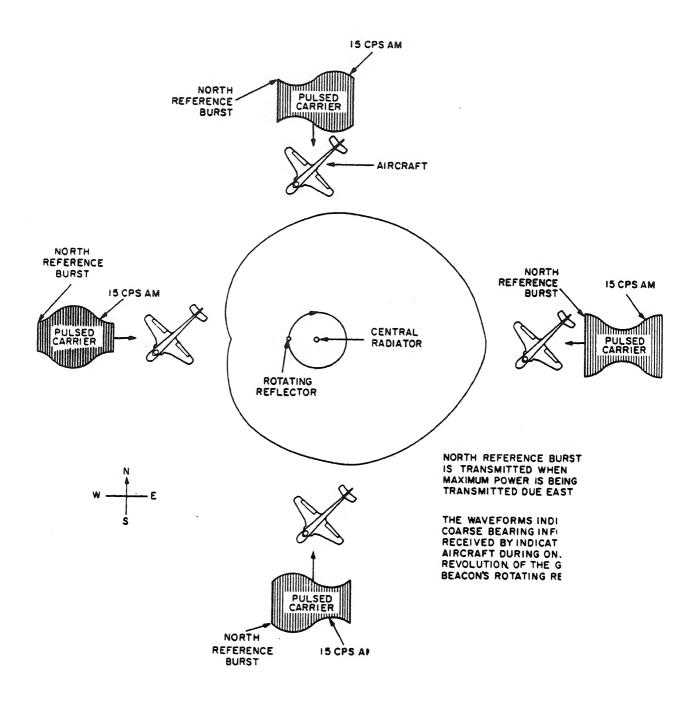




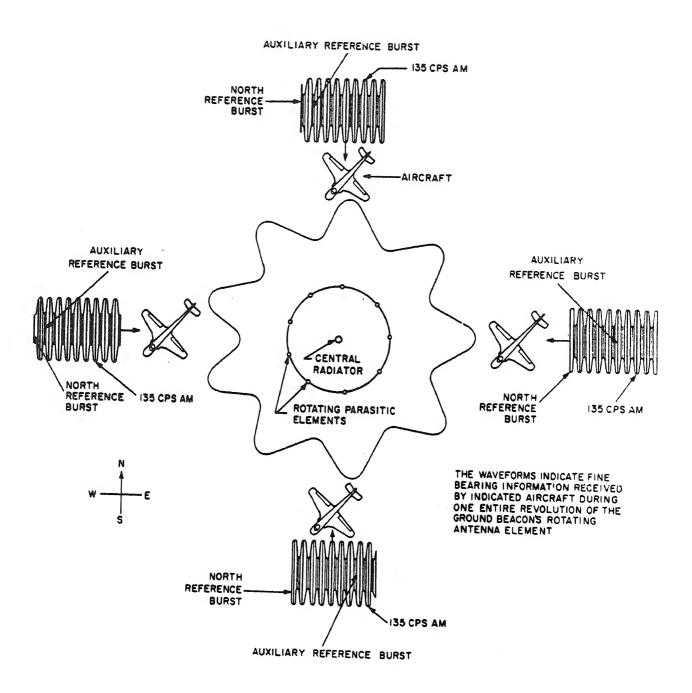




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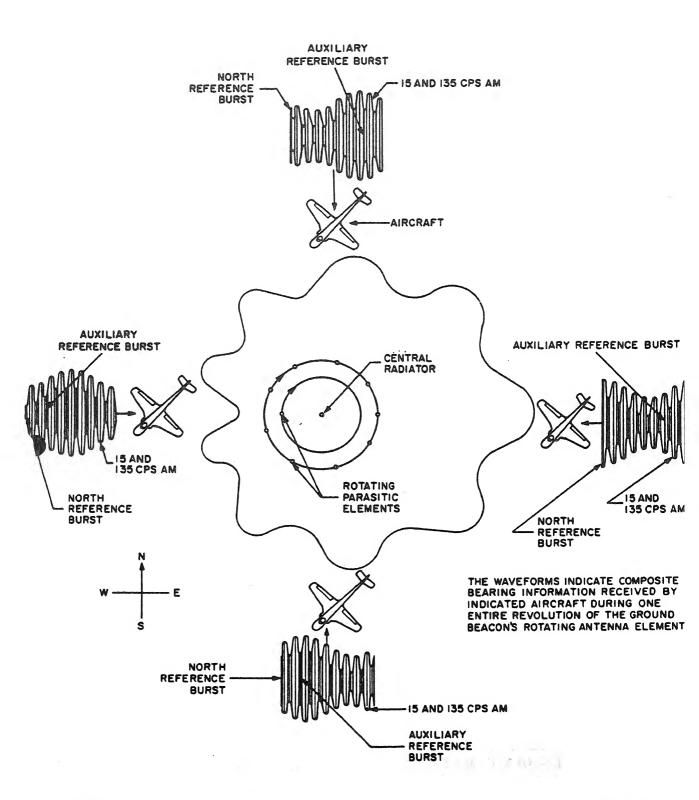


TACAN COARSE BEARING TRA



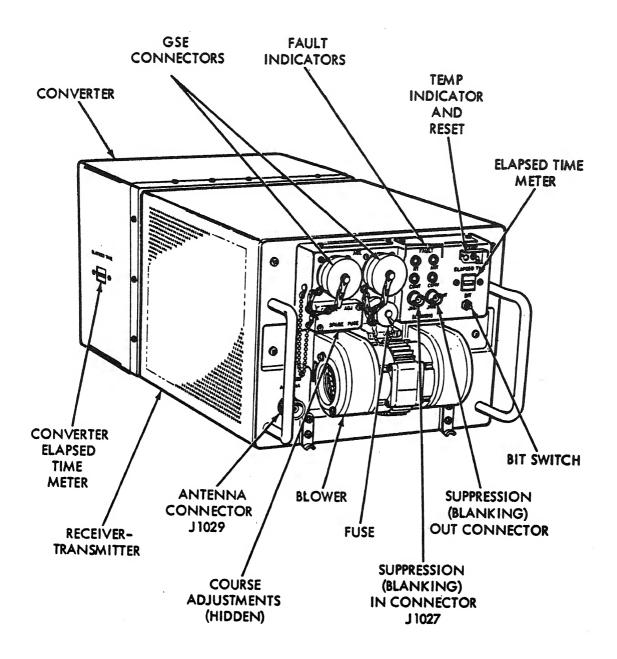
TACAN FINE BEARING TRANSMISSION-RECEPTION

-- EA-6B ---NAV-T-0007 I-CAP

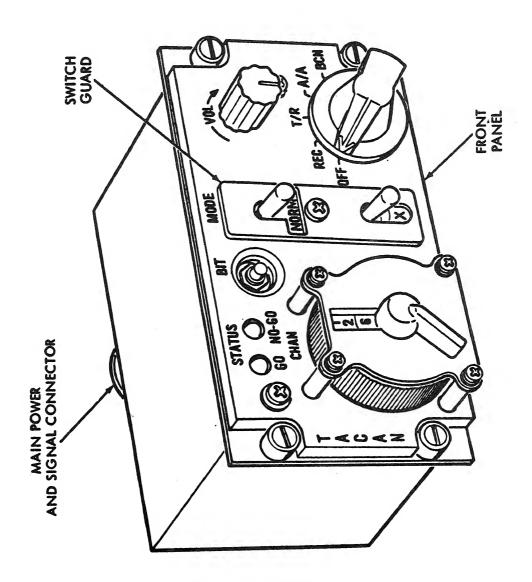


TACAN COMPOSITE BEARING TRANSMISSION-RECEPTION

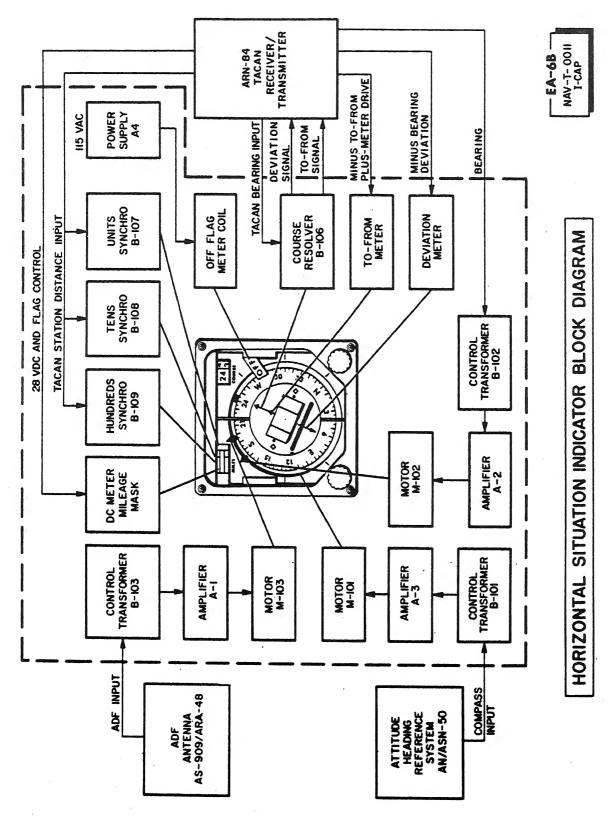
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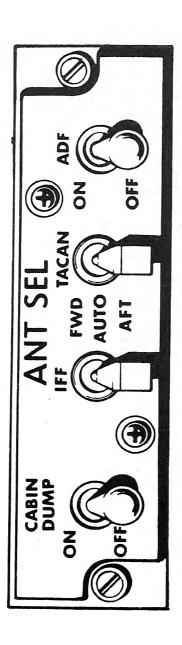


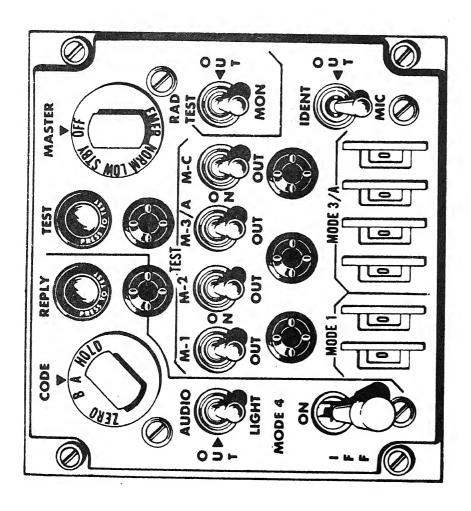
AN/ARN-84(V) CONVERTER/RECEIVER

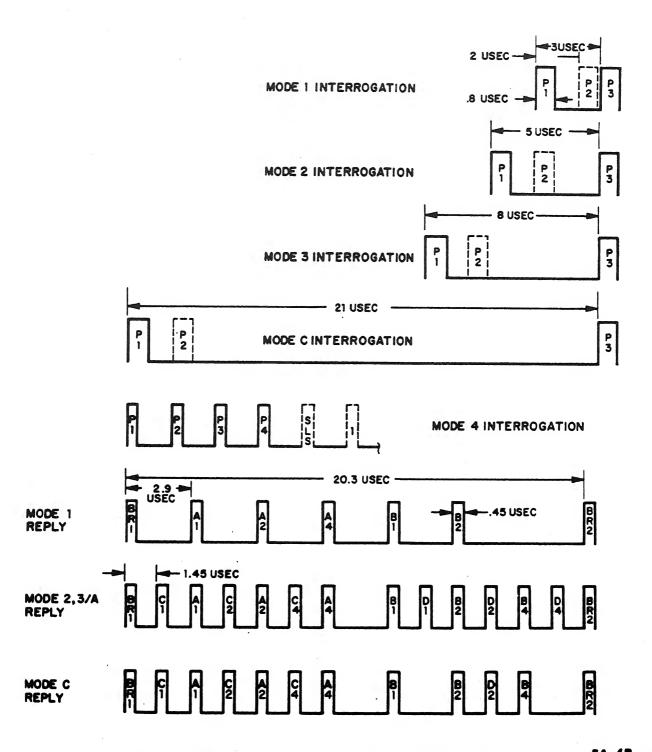


AN/ARN-84 (V) TACAN CONTROL PANEL





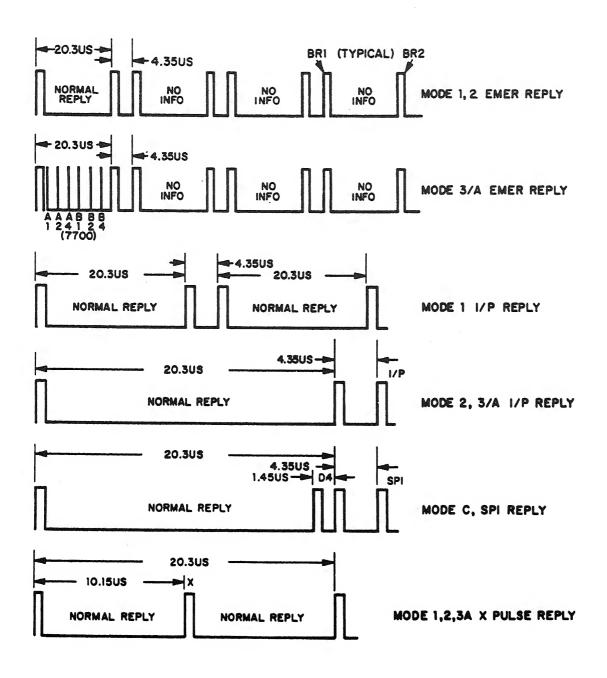




NORMAL IFF INTERROGATION AND REPLY PULSE TRAINS

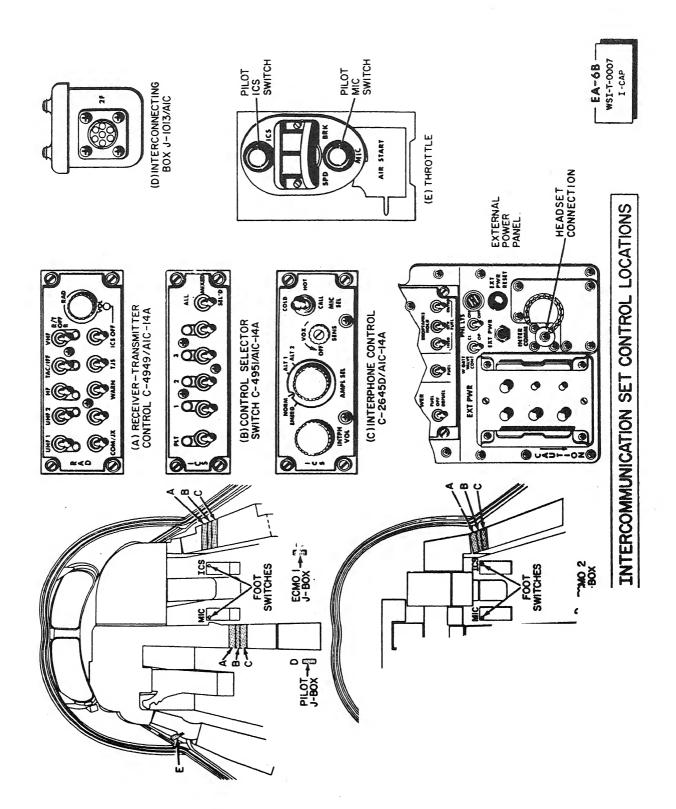
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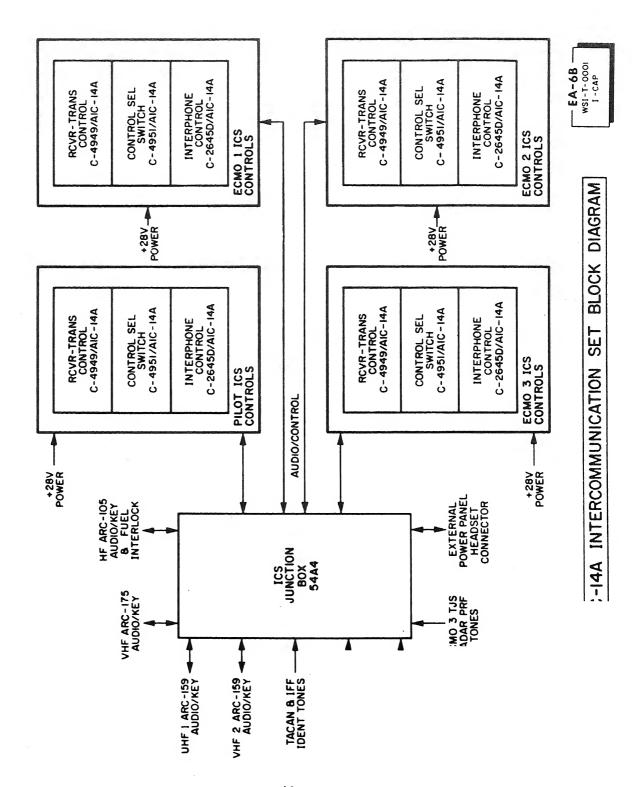
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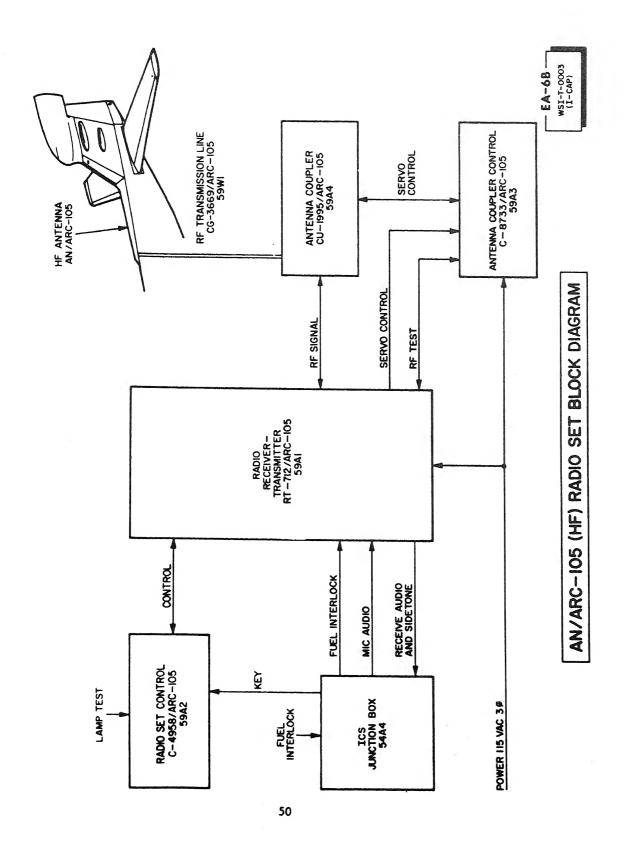


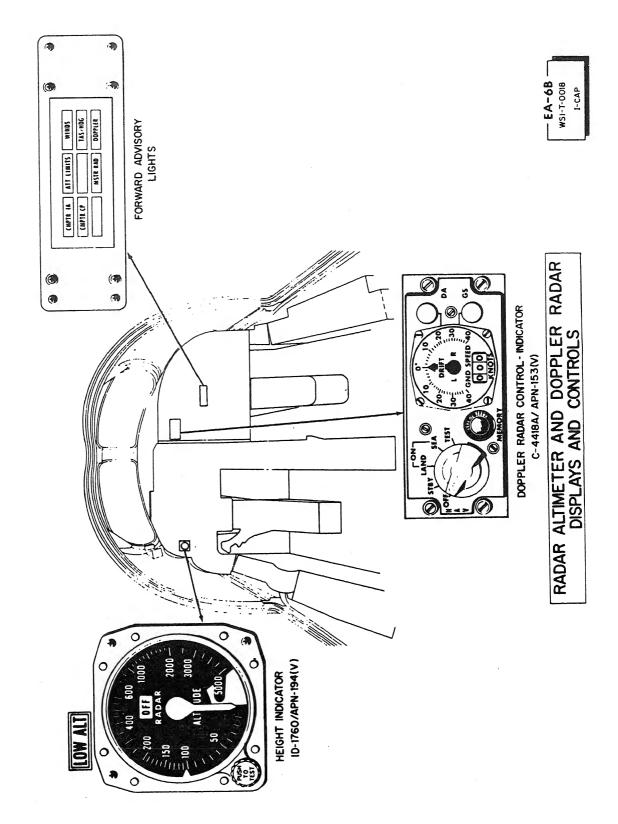
SPECIAL IFF REPLY CODES

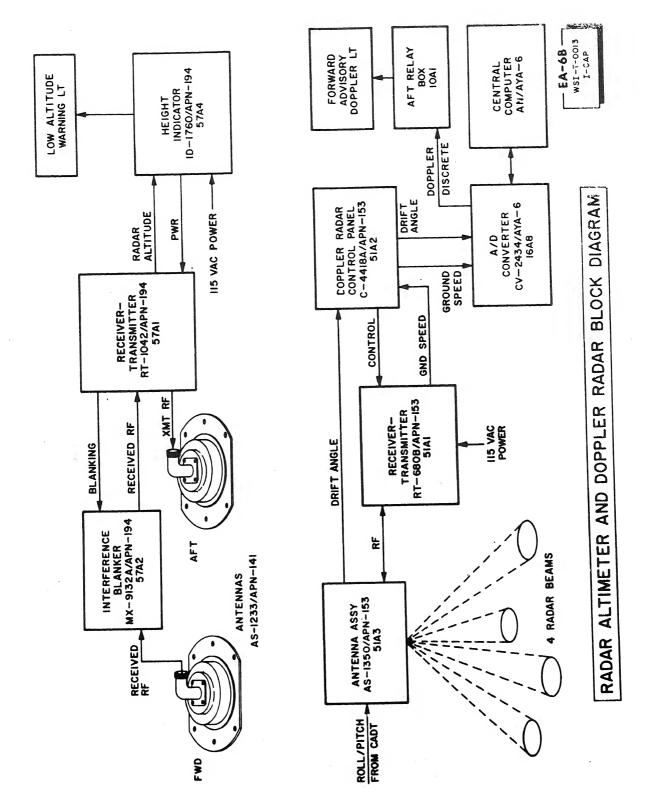
NAV-T-0013

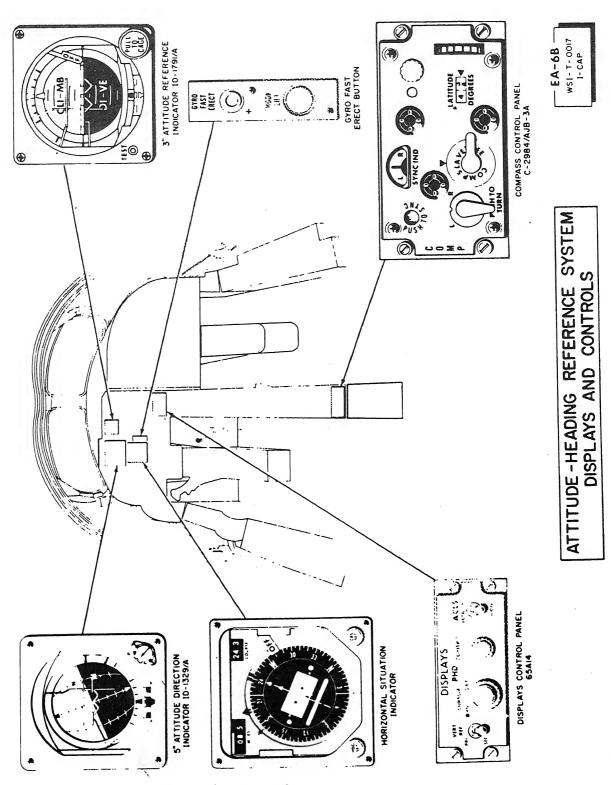


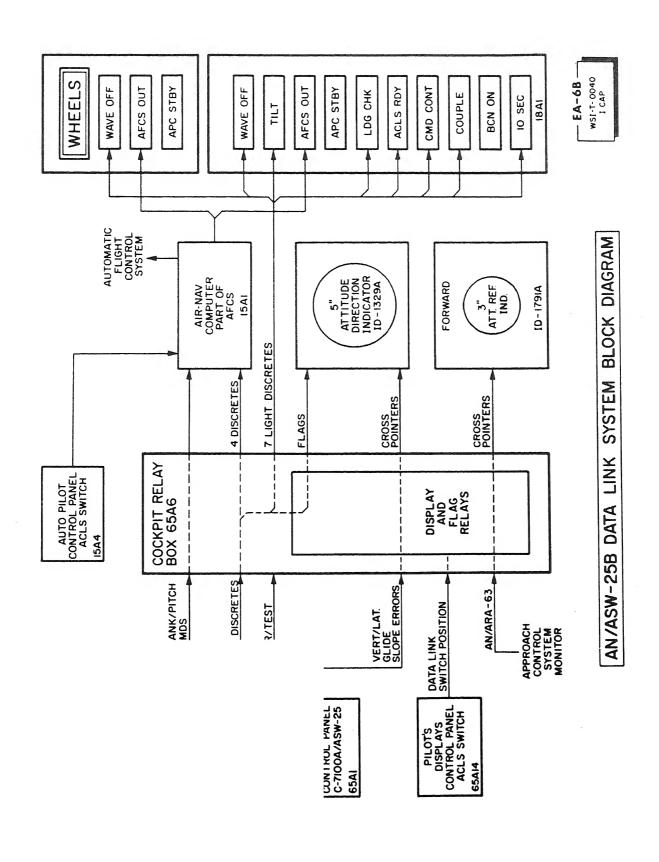


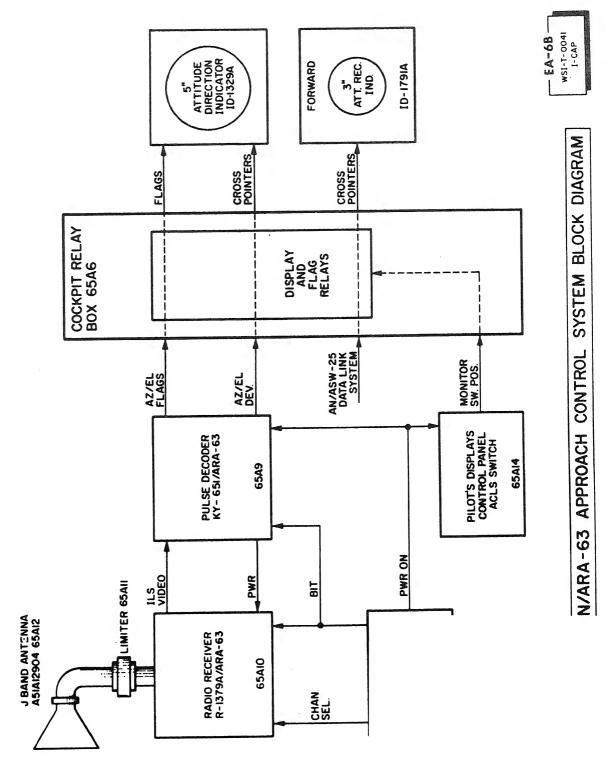


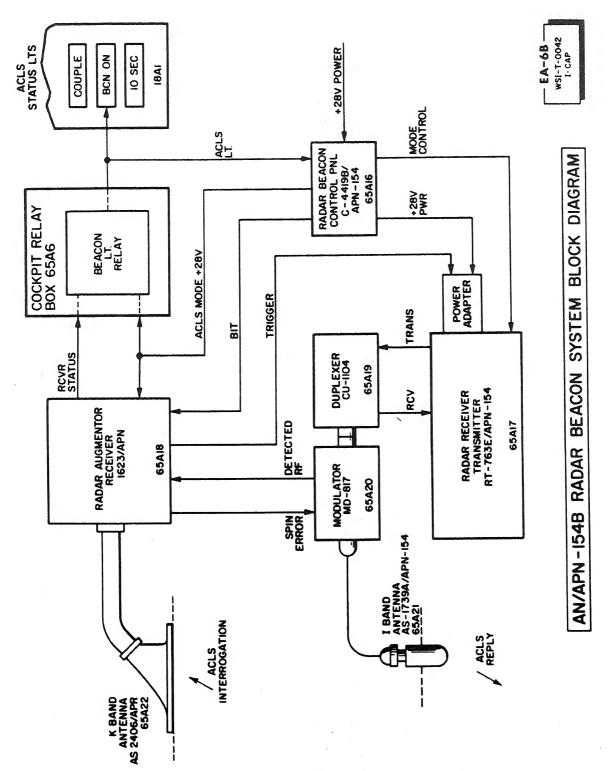


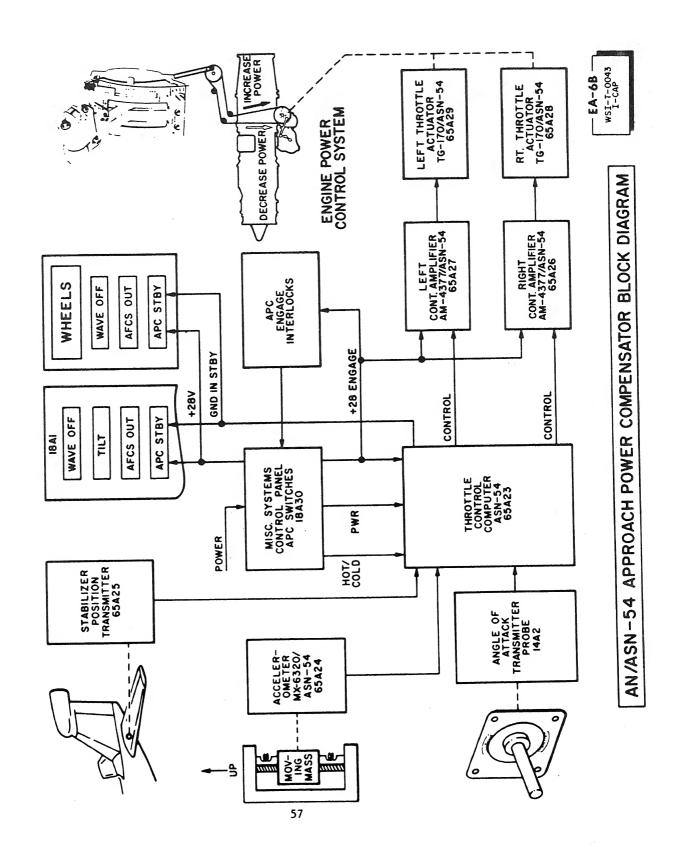


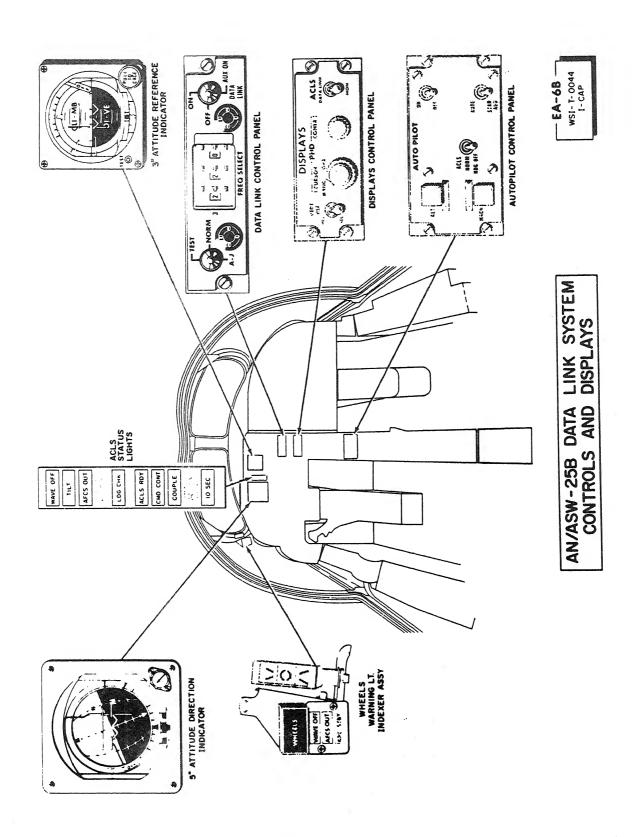


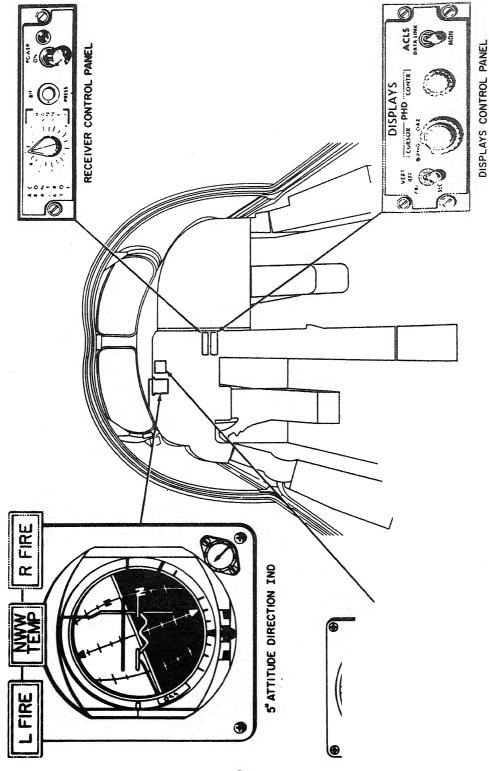




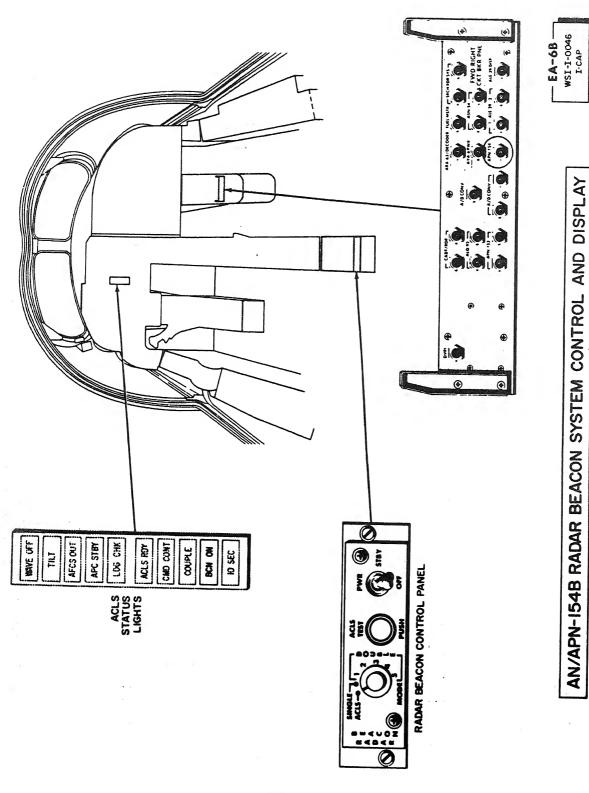


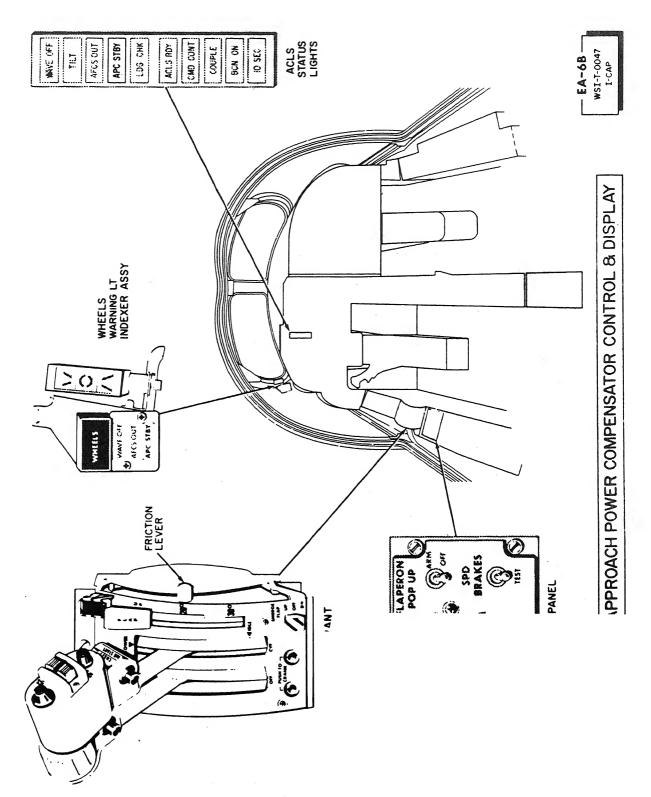




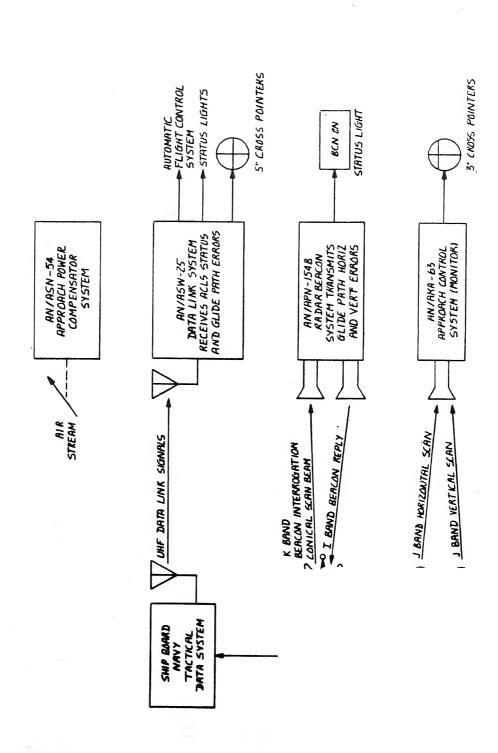


PPROACH CONTROL SYSTEM CONTROL AND DISPLAYS

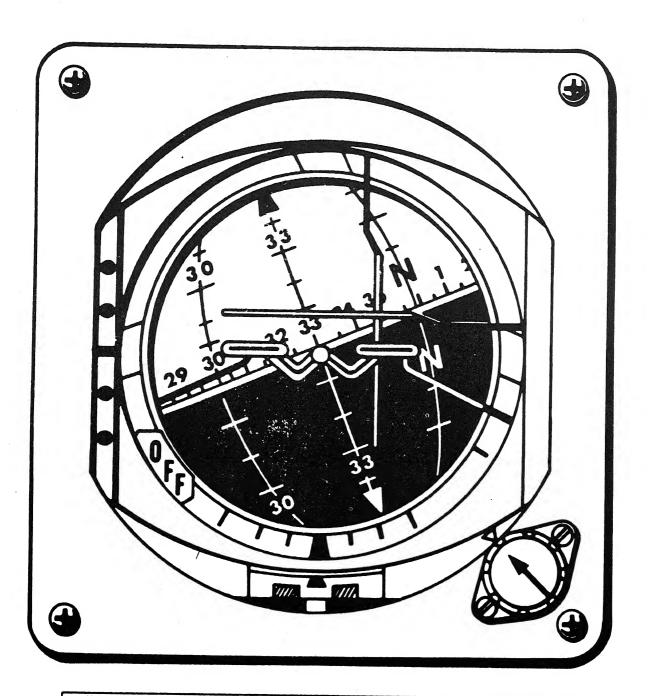




SIMPLIFIED ACLS BLOCK DIAGRAM

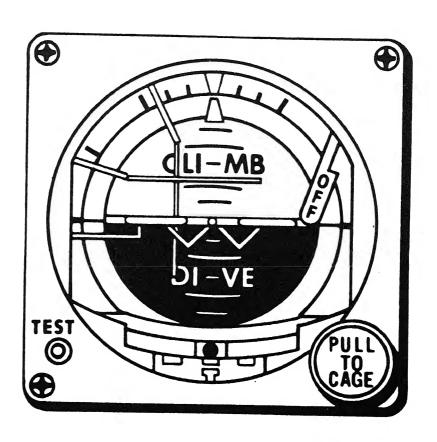


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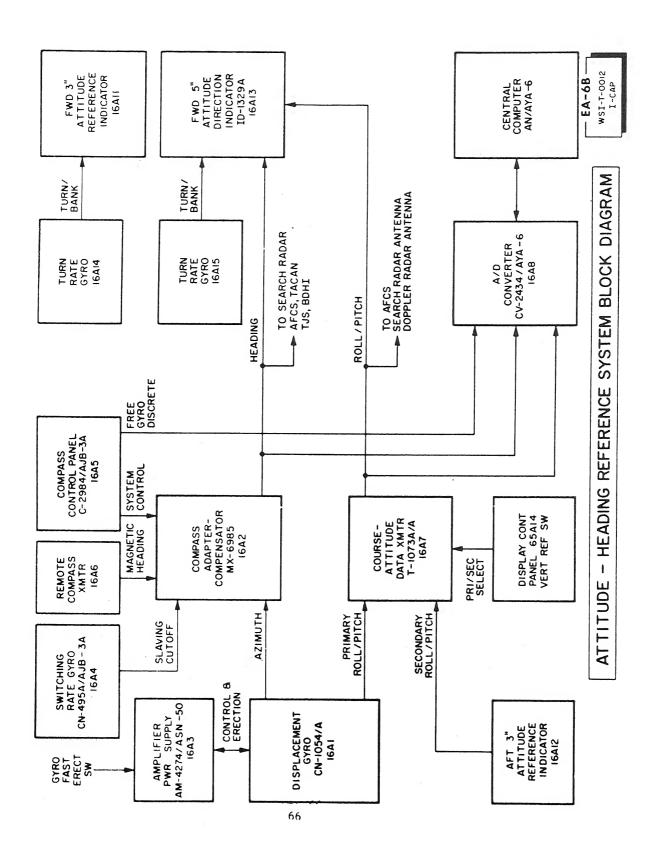
5"ATTITUDE DIRECTOR INDICATOR ID-1329A

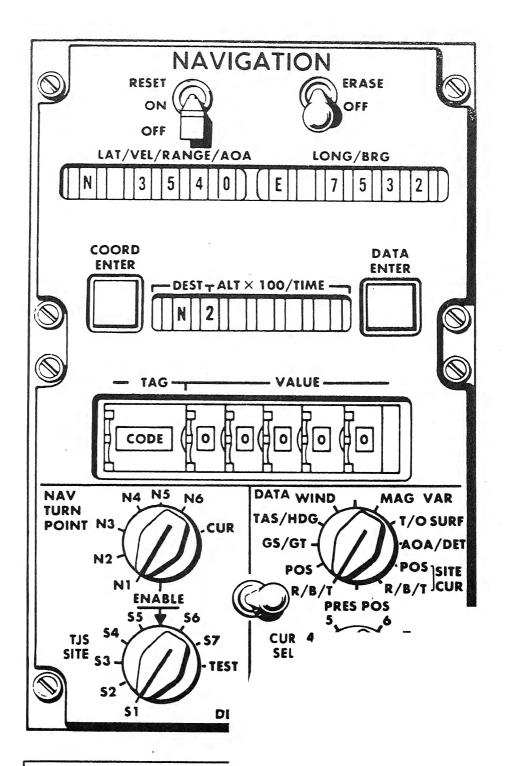
— **EA-05** — NAV-T-0017



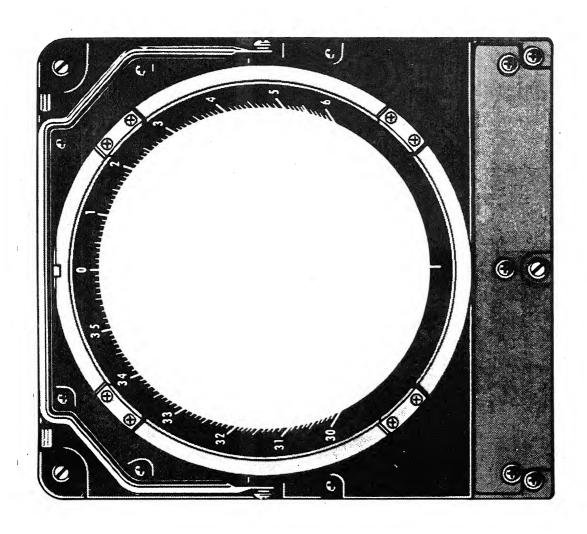
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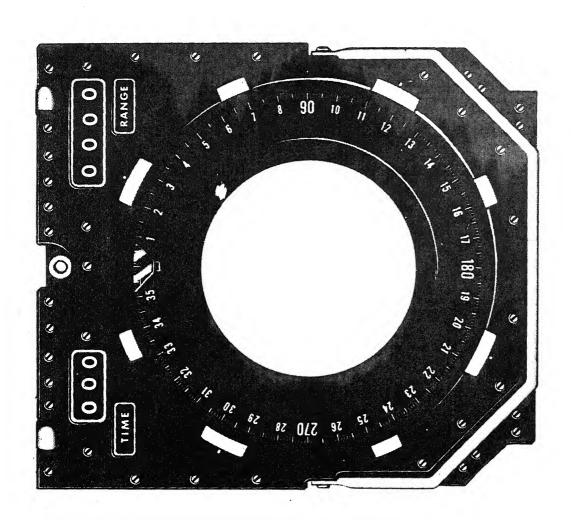
NAV-T-0018

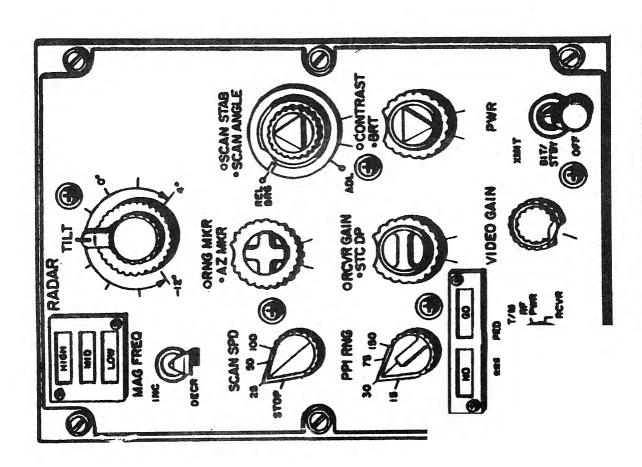


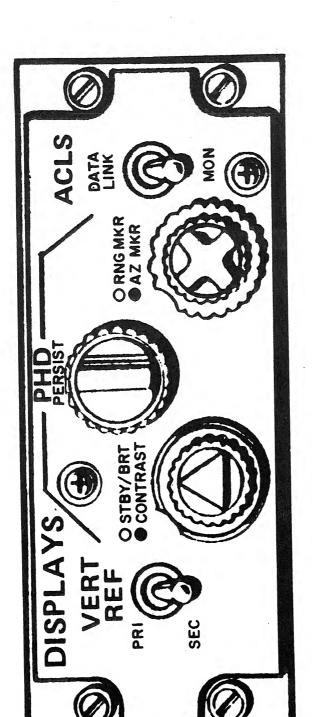


COMPUTER CONTROL INDI

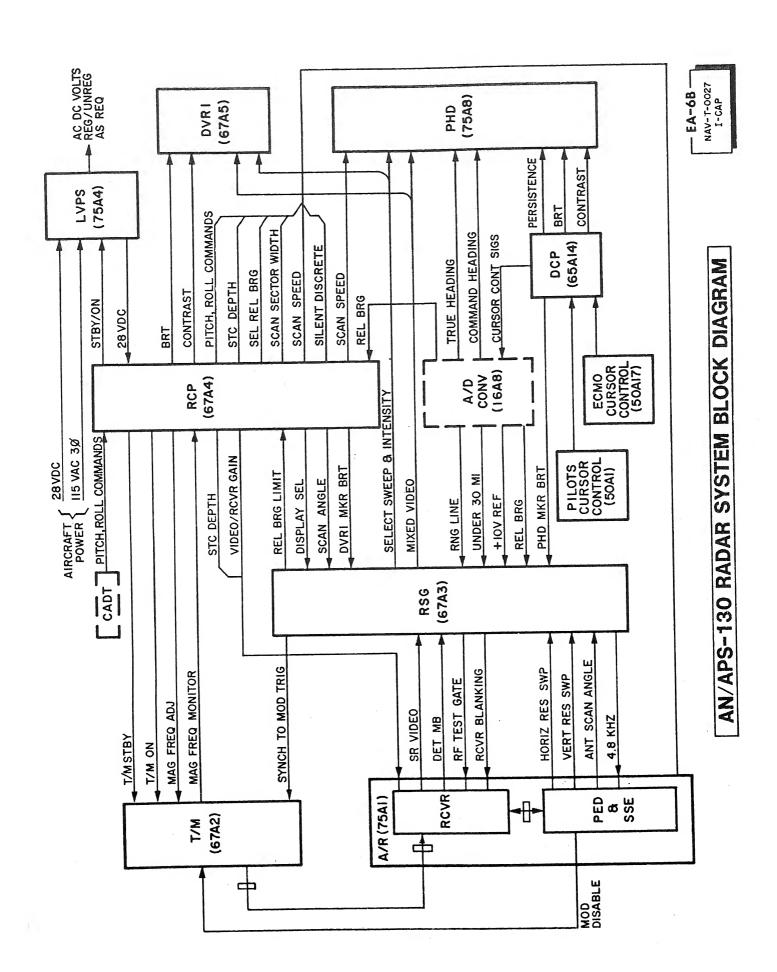


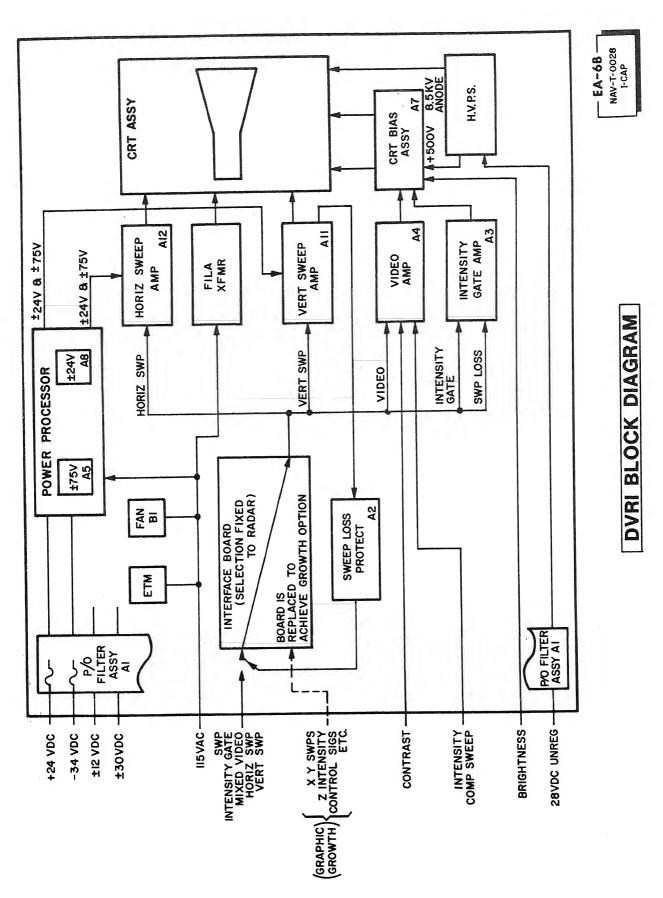


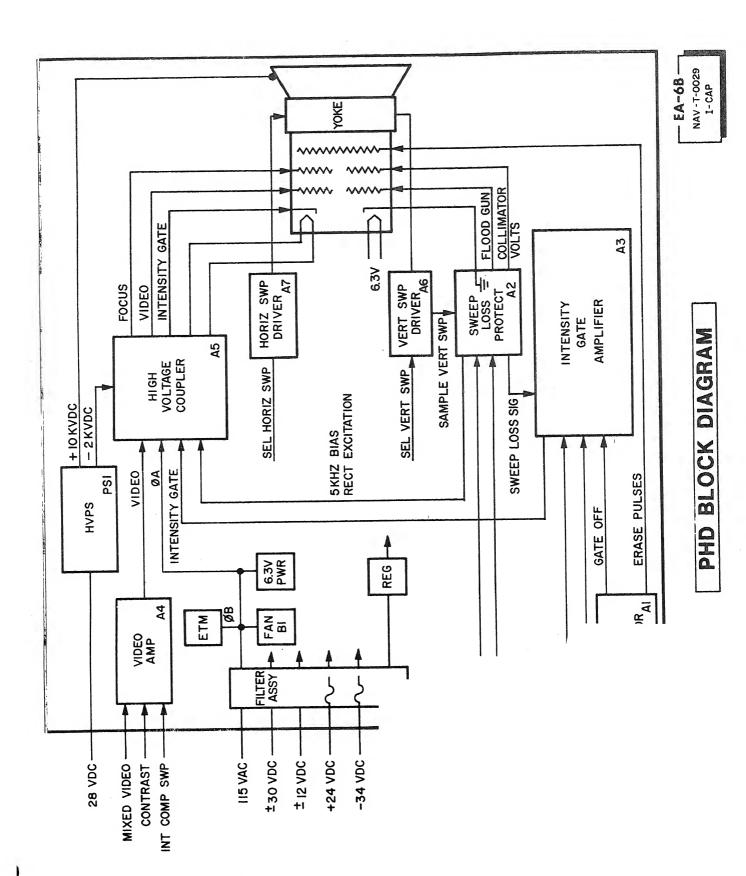


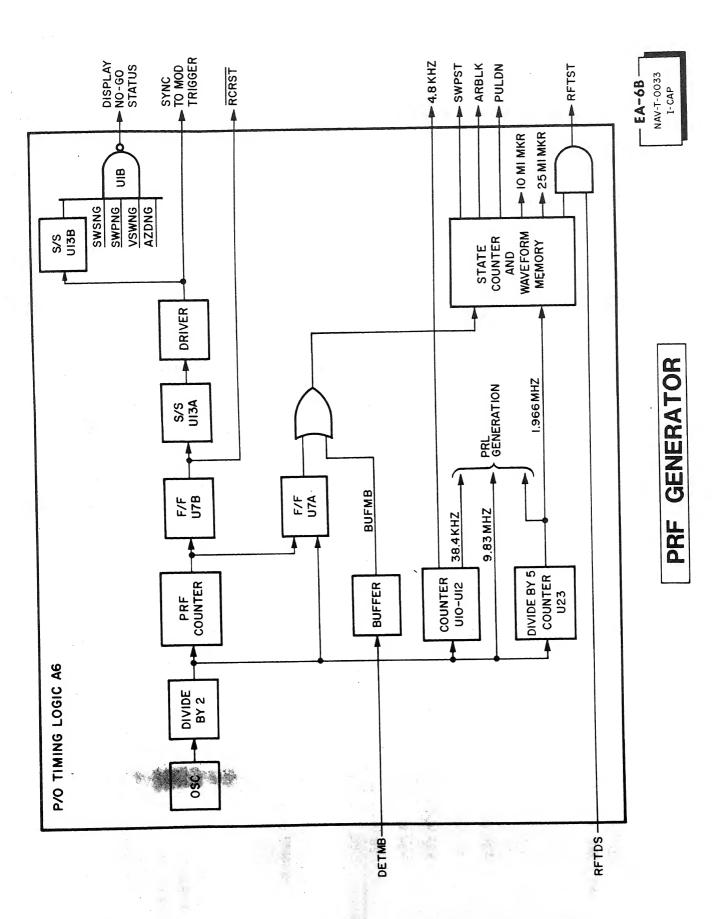


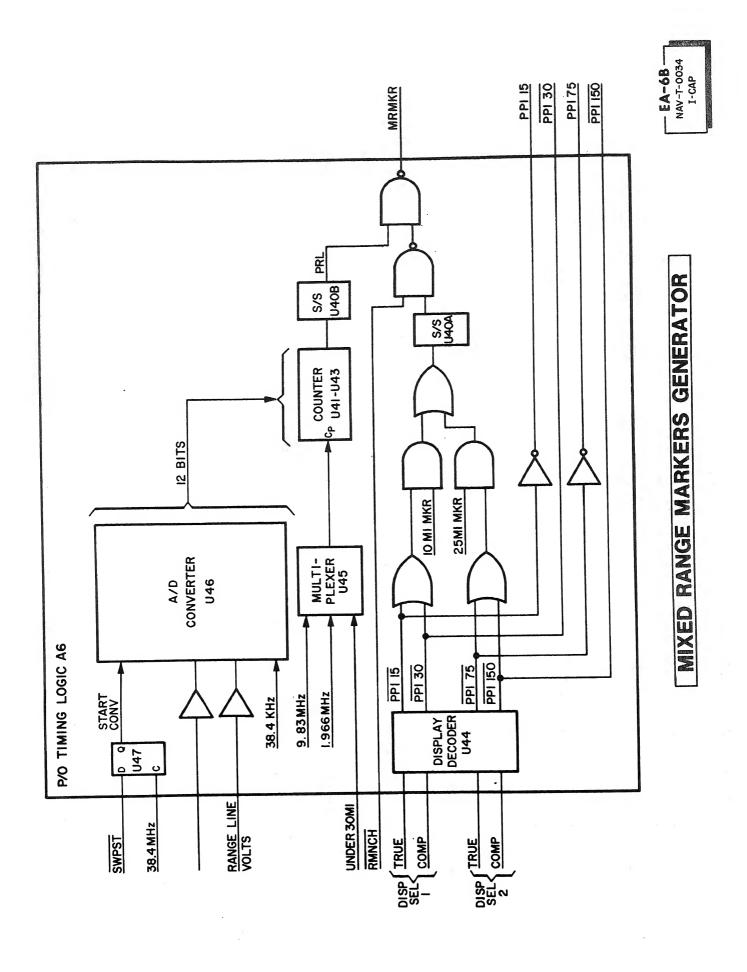
DISPLAYS CONTROL PANEL

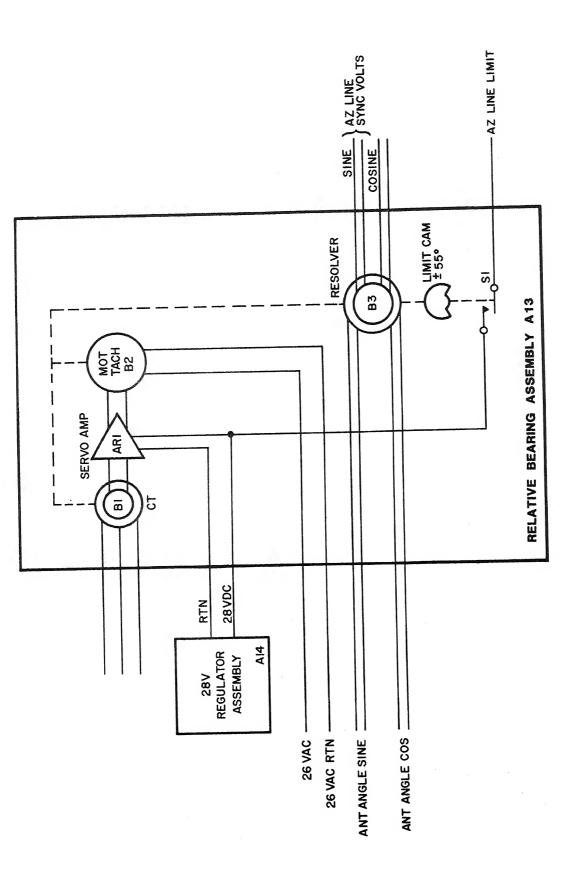












RSG RELATIVE BEARING SERVO

— **EA-6B** — NAV-T-0035

